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NPSN-PL-ER

22 August 1974

MEMO FOR: RECORD

SUBJECT: Duwamish Waterway Maintenance Dredging

1. On 14 August 1974 representatives of several agencies and institutions met at Seattle District to discuss proposed maintenance dredging of the Duwamish Waterway scheduled for winter, 1974-1975. A list of those attending the meeting is provided by Inclosure 1. The meeting agenda including the following items:

a. A review given by Dr. Robert Harmon, Shoreline Community College, to discuss results of his biological baseline studies of Elliott Bay completed through contractual agreement with the Seattle District.

b. A brief discussion of the research being conducted by the University of Washington, Department of Oceanography, for the Environmental Protection Agency on PCB and Pesticide Concentrations in Water and Sediments.

c. A summary of inhouse studies being conducted by EPA.

d. A consideration of research and/or monitoring which can be conducted in conjunction with the scheduled dredging project.

2. Seminar by Dr. Harmon: Dr. Harmon summarized results obtained from collection of about 100 biological samples in Elliott Bay between Four Mile Rock and the mouth of the Duwamish Waterway. The samples were from shelf areas as well as at depths approaching 100 fathoms. Complete study results will be contained in a final report which will be distributed to conference participants. Several significant conclusions can be summarized as follows:

a. High concentrations of wood fragments were confined to shelf areas due to the pycnocline which prevented their settling into the deeper areas of Elliott Bay.

b. One particular clam species was consistently associated with high wood fragment concentrations.

c. A consistently higher standing crop of organisms was found on the east side of Elliott Bay than on the west side.

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d. Consistently higher species diversity was found on the west side of Elliott Bay than on the east side.

e. Very obvious species zonation of organisms was found to be related to depth.

f. A very limited number of organisms were found in the vicinity of the Four Mile Rock disposal site.

g. The occurrence of very black hydrogen sulphide containing sediments on the east side of Elliott Bay indicated the influence of debris carried from the mouth of the Duwamish Waterway along the east side of Elliott Bay.

3. Research by the University of Washington: Dr. Pavlau briefly explained the objectives of the work in Elliott Bay being conducted by the University of Washington. They are attempting to carefully evaluate PCB concentrations in Duwamish River and Elliott Bay sediments as well as in the water column. In addition, they are determining the chemical form of the PCB's and the particle size of sediments with which they are associated. Following this they will be able to detect a pulse in PCB concentrations possibly caused by sediment resuspension due to dredging operations or other actions. A capability to include heavy metal analyses in the same studies was indicated.

4. EPA studies: The EPA is analyzing interstitial water characteristics of sediment samples from the Duwamish River. These analyses are directed toward determining what materials will be added to the water during a dredging operation and to give some indication of the interstitial water characteristics of the sediments deposited in open water during dredging. They are also conducting bioassays using the interstitial water samples.

5. Following the review of current research the meeting was opened up for suggestions of monitoring programs which may assist in determining the environmental effect of dredging operations and in selection of the best available disposal sites for dredged materials. There was no dearth of suggested research problems which could be conducted for collection of background information and in conjunction with the dredging operation. Some samples follow:

a. Careful monitoring of PCB, metals and other water quality characteristics in the waterway and at open water disposal sites before, during and after dredging. Inclusion of bioassays in this program was suggested.

b. Long-term sediment characterization and benthic biological monitoring at disposal sites before and following dredging operations.

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c. Monitoring of water quality affects from effluents of upland diked disposal sites. Inclusion of bioassays is suggested.

d. Determination of physical and chemical sediment characteristics which correspond to biological distributions determined by Dr. Harmon's work.

e. Verification studies of existing Environmental Protection Agency model which describes the fate of dredged materials disposed of in open waters.

6. It was indicated that a monitoring program would be conducted in conjunction with the proposed dredging operations, however, time and funding constraints would not allow completion or even initiation of all the studies suggested. Of some importance is that any study proposed be conducted in coordination with ongoing research programs. Hopefully this meeting, assisted in this coordination by updating the participants as to recently completed, ongoing, or proposed studies for the Elliott Bay vicinity.



FRED WEINMANN

cc w/incl:

Opns Div (Parker/Kissinger)

N&CP Sec

Thompson

Weinmann

Dice

ERS RP File

Attendees

DUWAMISH WATERWAY MAINTENANCE DREDGING MEETING  
14 August 1974

<u>NAME</u>	<u>AGENCY/INSTITUTION</u>
Fred Weinmann	Corps of Engineers
✓ Arnold Gahler	EPA
Bob Parker	Corps of Engineers
Stu Kissinger	Corps of Engineers
Hank Harder	W.D. Fisheries
Bob Pfeifer	W.D. Game
Joe Cummins	EPA
Dick Sylwester	SCC
Francis L. Nelson	EPA
Joseph N. Blazeovich	EPA
Ted Trepanier	DOE
John McDonnell	DOE
Beth Anderson	EPA
Doug Magoon	DNR
William A. Johnson	DNR
Bob Harmon	Shoreline Community College
Jack Mowreader	Corps of Engineers
Spyros Pavlau	University of Washington, Oceanography
John C. Serwold	SCC